

IN THE DRAWINGS

The attached sheets of drawings include changes to Figs. 15-27B. These sheets, which include the legend Background Art in black, replace the original sheets including the same legend in red.

Attachment: Replacement Sheets - 11

REMARKS/ARGUMENTS

Favorable consideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 4-8 and 23-27 are presently pending in this application, Claims 6-8 having been withdrawn from further consideration by the Examiner, Claims 4 and 24 having been amended by the present amendment.

In the outstanding Office Action, Claim 24 was rejected under 35 U.S.C. §112, first as containing subject matter not enabling to one skilled in the relevant art; and Claims 4, 5 and 23-27 were rejected under 35 U.S.C. §103(a) as being unpatentable over alleged admitted prior art in view of Beggs et al. (U.S. Patent 3,443,931) and Babcock et al. (U.S. Patent 2,986,460).

With regard to the rejection under 35 U.S.C. §112, first paragraph, Claim 24 has been amended to remove the noted subject matter and thus is believed to overcome this rejection.

Claims 4 and 24 have been amended herein. These claim amendments find support in the original specification, claims and drawings. For example, the amendments to Claims 4 and 24 are believed to be supported by page 24, line 3, to page 25, line 21, of the specification. Hence, no new matter is believed to be added thereby. If, however, the Examiner disagrees, the Examiner is invited to telephone the undersigned who will be happy to work in a joint effort to derive mutually satisfactory claim language.

Briefly, Claim 4 of the present invention is directed to a method of producing reduced iron pellets including pelletizing a mixture of iron oxide powder, a reducing material and a binder into raw material pellets, reducing the raw material pellets in a rotary bed-type direct reducing furnace to obtain reduced iron pellets, and rolling the reduced iron pellets in a heat

retaining and rolling portion of a rotary cylinder at a temperature ranging between 800 and 1200°C sufficiently such that the reduced iron pellets undergo sintering. By rolling such iron pellets as such after being reduced, the reduced iron pellets undergo sufficient sintering, thereby becoming more compacted and thus improving their collapsing strength significantly.¹

Babcock et al. disclose a production of iron. It is, nonetheless, respectfully submitted that Babcock et al. are not believed to teach "reducing the raw material pellets in a rotary bed-type direct reducing furnace to obtain reduced iron pellets; and rolling the reduced iron pellets in a heat retaining and rolling portion of a rotary cylinder at a temperature ranging between 800 and 1200°C sufficiently such that the reduced iron pellets undergo sintering" as recited in amended Claim 4 (emphasis added in Italic). Although the outstanding Office Action asserts that Babcock et al. use a rolling process in a rotary furnace, it is believed that Babcock et al. neither disclose nor suggest the sintering process of reduced iron and the use of a rotary bed-type direct reducing furnace for reducing iron oxide.² Therefore, the subject matter recited in amended Claim 4 is believed to be patentably distinguishable from Babcock et al.

The outstanding Office Action further asserts that Beggs et al. disclose the use of the rolling process for sintering in a process for making metalized pellets from iron oxide containing material. However, Beggs et al. are not believed to teach "reducing the raw material pellets in a rotary bed-type direct reducing furnace to obtain reduced iron pellets; and rolling the reduced iron pellets in a heat retaining and rolling portion of a rotary cylinder

¹ Specification, page 25, line 17, through page 26, line 8.

² *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) states as follows: “‘To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the things described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.’”

at a temperature ranging between 800 and 1200 C sufficiently such that the reduced iron pellets undergo sintering" as recited in amended Claim 4. Specifically, Beggs et al. simply disclose subjecting the reduced iron compacts to the rolling process while their insides are still in a molten state in the rotary bed-type direct reducing furnace, but not sintering by rolling the reduced iron pellets discharged from the rotary bed-type direct reducing furnace 221 in the hot zone 222a of the rotary cylinder 222 as shown in Fig. 5. Thus, the subject matter recited in amended Claim 4 is believed to be distinguishable from Beggs et al.

Because neither Babcock et al. nor Beggs et al. are believed to disclose the rolling as recited in Claim 4, even the combined teachings of these cited references are not believed to render the method recited in Claim 4 obvious.

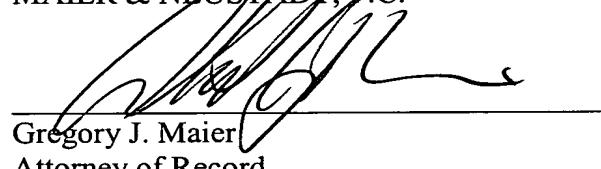
Applicants also wish to point out that neither Babcock et al. nor Beggs et al. are believed to disclose cooling the reduced iron pellets sintered in a hot zone 222a in a cooling zone where the water spray nozzles 232 are provided as recited in Claim 24. Thus, Claim 24 is believed to provide further distinction over Babcock et al. and Beggs et al.

For the foregoing reasons, Claim 4 is believed to be allowable. Furthermore, since Claims 5 and 23-25 depend directly from Claim 4, substantially the same arguments set forth above also apply to these dependent claims. Hence, Claims 5 and 23-25 are believed to be allowable as well.

In view of the amendments and discussions presented above, Applicants respectfully submit that the present application is in condition for allowance, and an early action favorable to that effect is earnestly solicited.

Respectfully submitted,

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